

## *Begonia* (sect. *Sphenanthera*) *hayamiana* (Begoniaceae), a New Species from Northern Myanmar

NOBUYUKI TANAKA<sup>1</sup> and MARK HUGHES<sup>2</sup>

<sup>1</sup>Department of Botany, Kochi Prefectural Makino Botanical Garden, Godaisan 4200-6, Kochi 781-8125, Japan;

<sup>2</sup>Royal Botanic Garden Edinburgh, 20A Inverleith Row, Edinburgh EH 3 5LR, Scotland, U.K.

*Begonia* (sect. *Sphenanthera*) *hayamiana* Nb. Tanaka (Begoniaceae), a new species from northern Myanmar with fleshy fruits, is described and illustrated. *Begonia hayamiana* is characterized by a combination of nearly symmetric leaves that are truncate at the base, and 4-locular fruit. It is known only from the type locality in the Hukaung Valley Tiger Reserve, Kachin State.

Key words: *Begonia*, Begoniaceae, *Begonia* sect. *Sphenanthera*, Hukaung Valley, Myanmar

A team from the Makino Botanical Garden and Botanical Gardens, University of Tokyo, in cooperation with the Forest Department, Union of Myanmar Ministry of Forestry, has conducted several field expeditions to the Hukaung Valley Tiger Reserve, Kachin State, northern Myanmar, since 2005. Still, the Hukaung Valley, one of the largest national parks in Myanmar, remains floristically poorly known. During an expedition in 2005, a hitherto undescribed species of *Begonia* L. was discovered.

Morphological study of the plants revealed them to belong to section *Sphenanthera*, characterized by 4-locular baccate fruits and extended anther connectives. *Begonia* is a pantropical genus containing about 1500 species of herbs, shrubs, and climbers divided into 63 sections (Doorenbos et al. 1998), and is mainly distributed in the tropics and subtropics of South America, Africa and Asia (Nguyen 2004). Section *Sphenanthera* is an exclusively Asian section, which has traditionally been recognized on the basis of the members having

baccate fruits (Tebbutt 2003).

The new species described here is distinguished from all other species with 4-locular ovaries in the same section (*B. acetosella* Craib., *B. burkittii* Dunn, *B. handelii* Irmsch., *B. roxburghii* A. DC. and *B. tessaricarpa* C. B. Clarke) by having nearly symmetric leaves that are truncate at the base. The species is named for Yoshihiro Hayami, an excellent gardener at the Makino Botanical Garden, who was the first to find it.

***Begonia hayamiana* Nb. Tanaka, *sp. nov.* (Figs. 1-3)**

E sectione *Sphenanthera*; ab omnibus speciebus ovarium tetralocularem habentibus foliorum laminis fere symmetricis et basi aut subtruncatis aut leviter cordatis conspicue recedit.

*Typus.* MYANMAR, Kachin State: west of Makaw Village, 6 miles north of Tanaing. 26° 26' 23"–40" N, 96° 41' 25"–38" E, alt. 200–220 m, 1 December 2005, Jin Murata, Shiro Kobayashi, Yoshihiro Hayami & Michihisa Takashima 040803 (holo- RAF; iso- MBK [2 sheets], TI). One of the isotypes at MBK (MBK 0140337) has

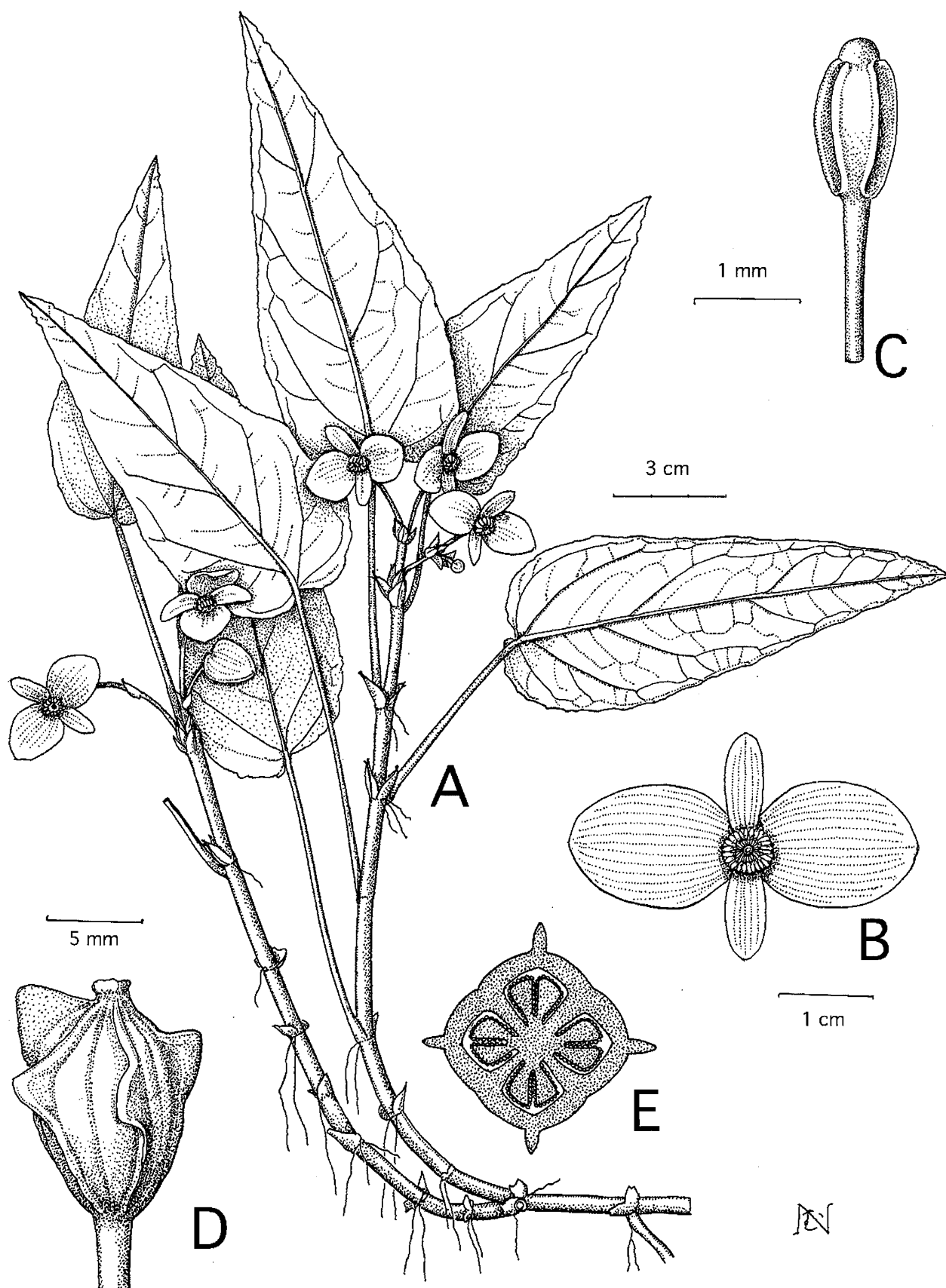


FIG. 1. *Begonia hayamiana* Nb. Tanaka (based on *J. Murata et al.* 040803, MBK-isotypes). A. Habit. B. Staminate flower enlarged. C. Stamen. D. Fruit. E. Cross section of fruit.



flowers (Fig. 2); the other (MBK 0140336) bears fruits (Fig. 3).

*Plants* herbs, perennial, repent, 20-25 cm tall, tubers ascending. *Stems* usually basally, rooting at nodes; branches few; internodes 1.5-3 cm long. *Leaves* alternate; petiole reddish green, 4-10 cm long, glabrous; blade sub-symmetrical, base truncate to sub-cordate, green, purplish along midrib, adaxially glabrous, abaxially with sparse fleshy hairs, 9-17 cm long, 3-5.5 cm wide. *Inflorescences* axillary, cymose, 3-6-flowered, bisexual; bracts oblong-lanceolate, persistent, glabrous, margin entire, apex acute, 0.7-1.2 cm long, 0.3-0.5 cm wide. *Staminate flowers* white, 3-3.5 cm in diam.; stamens ca. 80, pale yellow; filaments free for 3/4 of their length, 1.5-2 mm long, fused at base into a short column; anthers 1.5-2 mm long, ellipsoid to ellipsoid-obovoid, connective extended, apex round. *Pistillate flowers* unknown. *Infructescence* 3-6-fruited; pedicels 1-1.5 cm long; fruit indehiscent, 1.2-1.5 cm long, 0.8-1.2 cm wide, fleshy, somewhat pendulous, green, sparsely hairy, suborbicular, with 4 subequal rounded-triangular wings to 0.5 cm long across equator of fruit, 4-locular, placentae bifid.

*Distribution.* Northern Myanmar. Thus far known only from the type locality.

*Habitat & Ecology.* Dark shaded wet places in evergreen forest. Elevation 200-220 m. Terrestrial.

*IUCN category:* LC (Least Concern). Although *Begonia hayamiana* is known only from

the type locality, the Hukaung Valley Tiger Reserve supports considerable rainforest between 200 and 800 m elevation.

*Other specimen examined.* MYANMAR, Kachin State: east of Makaw Village, 6 miles north of Tanaing. 26° 26'34"-38" N, 96° 41'37"-42'35" E, alt. 200-210 m, 1 Dec. 2005, Jin Murata, Shiro Kobayashi, Yoshihiro Hayami & Michihisa Takashima 040552 (E, MBK, TI).

We thank U Tun Paw Oo, director of Nature and Wildlife Conservation Division, and U Soe Win Hlaing, director general, Forest Department, Union of Myanmar Ministry of Forestry, for arranging our field research, Ms. M. Nakajima for preparing the illustrations and Prof. Tetsuo Koyama for reviewing the Latin diagnosis. This research is supported by a Grant-in-Aid from the Japanese Ministry of Education, Culture, Sports and Science and Technology to Prof. Jin Murata (17255004), a Grant-in-Aid from the Kochi Prefectural Government and the M. L. MacIntyre Trust, the Sibbald Trust and SYNTHESYS (awards NL-TAF1608, FR-TAF 1416 and DE-TAF 2181).

## References

- Doorenbos, J., M. S. M. Sosef & J. J. F. F. de Wilde. 1998. Studies in *Begoniaceae* VI. The sections of *Begonia* including descriptions, keys and species lists. Wageningen Agric. Univ. Pap. 98-2: 1-266.
- Nguyen, Q. H. 2004. A new species of a peltate-leaved *Begonia* (*Begoniaceae*) from Vietnam. *Novon* 14: 105-107.
- Tebbutt, M. C. 2003. Taxonomy of *Begonia longifolia* Blume (*Begoniaceae*) and related species. *Brittonia* 55(1): 19-29.

Received August 13, 2007; accepted September 29, 2007